

REMARKS

Claims 1-13 were pending when last examined, all of which stand rejected. Claims 1 and 10 are amended, and Claims 14-16 are newly added. Claims 5-9 are canceled.

Claim Rejections – 35 USC § 103

Claims 1-13 are rejected under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 6,933,533 to Yamazaki et al. (“Yamazaki”) in view of U.S. Published Patent Application No. 2005/0038276 to Laxman et al (“Laxman”) and further in view of U.S. Patent No. 6,372,661 to Lin et al. (“Lin”).

Independent Claim 1 is patentable over Yamazaki, Laxman, and Lin at least because it recites “... a first electrode electrically coupled to the thin film transistor and having a surface treated by oxygen plasma” As explained in the Application (e.g., page 4, lines 5-13, page 5, lines 19-24), surface-treating an electrode (e.g., pixel electrode) to enhance luminance efficiency is difficult to do when the electrode is formed around an organic insulating film. The reason is because polymers in the organic insulating film may be damaged by exposure to plasma. The invention solves this problem by forming a chemical vapor deposition film on the electrode. Since the chemical vapor deposition film is not damaged by surface treatment (e.g., oxygen plasma treatment) of the first electrode, use of the chemical vapor deposition film allows the first electrode to be surface-treated for luminance efficiency enhancement.

Yamazaki differs from Claim 1 in that it does not teach or suggest “a first electrode ... having a surface treated by oxygen plasma.” There is no mention of surface-treating the pixel electrode in Yamazaki. Although Laxman discloses a CVD process for producing low-dielectric constant thin films, he fails to teach or suggest that a CVD thin film may be formed on an electrode in an organic electroluminescent device so that the electrode can be subjected to oxygen plasma. Lin, like Yamazaki and Laxman, also fails to teach or suggest “a first electrode ... having a surface treated by oxygen plasma.”

For the above reasons, Claim 1 is patentable over Yamazaki, Laxman, and Lin.

Dependent claims 2-4 are patentable over Yamazaki, Laxman, and Lin for the same reason as Claim 1.

Claims 5-9 are canceled.

Claim 10 is patentable because it recites “a chemical vapor deposition insulating film ... having an opening portion formed on the first electrode with an inverse-tapered shape.” The Application discloses, for example in FIG. 3 and page 12, lines 25-27, a CVD insulating film 218 that is patterned to have an inverse tapered slope. The opening 240 above the first electrode 210 is formed with a tapered slope. The Office Action fails to address Claim 10 in its rejections and therefore does not establish a prima facie case of obviousness for the limitations recited in Claim 10. Applicants would like to point out that none of Yamazaki, Laxman, and Lin teaches or suggests forming an inverse-tapered shape opening in the chemical deposition insulating film.

Claims 11-13 depend from Claim 10 and are patentable for the same reason as Claim 10.

Newly added independent Claim 14 is patentable over the cited references because it recites “treating a surface of the first electrode by using oxygen plasma.” The explanation provided above in reference to Claim 1 applies here. Claims 15 and 16 depend from Claim 14 and are thus also patentable.

Conclusion

Based on the foregoing reasons, Claims 1-4 and 10-16 are now in condition for allowance. Please telephone the undersigned attorney at (408) 392-9250 if there are any questions.

Respectfully submitted,

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Dated: 6/30, 2008

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